

IN THE CLAIMS:

1. (Currently Amended) A method ~~Method~~ for handling substantially rod-shaped objects, particularly poles of articles individually stacked in one another, ~~such as plastic cups, during a loading processes process in conjunction with a loading aid, particularly a carton, the objects to be handled being made available in a first geometrical arrangement by a manufacturing or processing machine, characterized in that~~ method comprising:

providing objects in a first geometrical arrangement via a manufacturing or processing machine, said first geometrical arrangement having a first packaging density;

gripping a portion initially at least part of each object the objects is gripped; with a gripping device such that the objects are positioned in said first geometrical arrangement;

modifying said first geometrical arrangement after gripping the objects via moving the objects with said gripping device such that the objects form a modified geometrical arrangement having a modified packaging density, said modified packaging density being greater than said first packaging density; that subsequently a relative mutual arrangement of the objects is modified and that then the modified arrangement of the objects is deposited in the loading aid, the objects being arranged in upright-standing manner

providing a loading aid for receiving the objects;

depositing the objects in said modified geometrical arrangement in said loading aid with said gripping device such that each object is in a vertical position within said loading aid.

2 - 4. (Canceled)

5. (Currently Amended) Method according to claim [[4]] 1, ~~characterized in that~~
wherein said gripping device has gripping elements, one gripping element being movable
relative to another gripping element such that said gripping elements modify a lateral spacing
defined by one object and another object, whereby said gripping elements modify said first
5 geometrical arrangement to form said modified geometrical arrangement ~~the modification to~~
~~the geometry of the first object arrangement takes place by modifying a spacing of the gripping~~
~~elements.~~

6. (Canceled)

7. (Currently Amended) Method according to claim [[6]] 1, further comprising a
magazine means for receiving the objects in said first geometrical arrangement and modifying
an arrangement of said objects ~~characterized in that an arrangement geometry of the objects is~~
~~modified in the magazine means.~~

8. (Currently Amended) Method according to claim 5, ~~characterized in that~~ wherein
said gripping device modifies the objects from said first geometrical arrangement to said
modified geometrical arrangement with said gripping elements within said loading aid based on
a the geometry change takes place between a first position predetermined on gripping the
5 objects and a second relative position predetermined by a sought packing density in the loading
aid with respect to the gripping elements and/or storage elements.

9 - 10. (Canceled)

11. (Currently Amended) Method according to claim [[9]] 1, ~~characterized in that~~
wherein the objects are removed row by row removal takes place rowwise or blockwise.

12. (Currently Amended) Method according to claim [[6]] 7, ~~characterized in that~~
wherein the objects are arranged in rows in said magazine means, each row having a length of
the object rows in the magazine means corresponds corresponding to a dimension of the loading
aid.

13 - 14. (Canceled)

15. (Currently Amended) Method according to claim 1, ~~characterized in that, following~~
~~deposition of the objects, the~~ wherein said loading aids are ~~is~~ stored or conveyed for a further
processing of the ~~articles~~ objects after depositing the objects in said loading aid, such as
decorating or filling said objects being decorated or filled during said further processing of the
objects, wherein the objects are removed rowwise from the loading aid before the objects are
further processed.

16. (Currently Amended) Method according to claim 15, ~~characterized in that~~ wherein
the objects for further processing ~~of the articles~~ are removed from [[the]] said loading aid by

~~means of~~ via a further gripping device, said further gripping device being a removal device
(~~removal device~~).

17 - 18. (Canceled)

19. (Currently Amended) Method according to claim 16, ~~characterized in that~~ wherein
the objects are removed from ~~[[the]]~~ said loading aid and ~~[[then]]~~ redeposited therein by a
common handling device, ~~particularly a multiaxial industrial robot.~~

20. (Canceled)

21. (Currently Amended) Method according to claim 1, ~~characterized in that the~~
wherein said loading aid is inclined relative to ~~[[the]]~~ vertical during deposition and/or removal
of ~~the~~ objects.

22. (Currently Amended) Method according to claim ~~[[20]]~~ 21, ~~characterized in that~~
further comprising a spreading station for inclining said loading aid and for the inclination of
~~the loading aid and the spreading out/application of~~ ~~[[the]]~~ a lining takes place in a spreading
~~station provided for this purpose.~~

23. (Currently Amended) ~~Device~~ A device for handling substantially rod-shaped

objects, particularly poles of articles which can be individually stacked in one another such as plastic cups, the device comprising:

5 a manufacturing or processing machine providing objects following the provision thereof
to a corresponding manufacturing or processing machine in a first geometrical arrangement, one
object and another object defining a lateral spacing; during loading processes in conjunction
with

a loading aid, ~~particularly a carton, characterized by~~

10 a first gripping device, ~~which is constructed for gripping at least [[part]]~~ a portion of
each of the objects in said first geometrical arrangement located at an interface with the said
manufacturing or processing machine, said gripping device moving the objects in said first
geometrical arrangement after gripping the objects such that the objects form a modified
geometrical arrangement, wherein said lateral spacing between objects in said modified
15 geometrical arrangement is less than said lateral spacing between objects in said first
geometrical arrangement, said first gripping device transferring the objects from said
manufacturing or processing machine to said loading aid, said first gripping device depositing
and for the deposition of the objects in said modified geometrical arrangement in said loading
aid such that the objects are in an upright position in said loading aid standing manner.

24. (Canceled)

25. (Currently Amended) Device according to claim 23, characterized in that there are

further comprising a magazine means for ~~depositing~~ receiving the objects contained in the first gripping device prior to deposition in the loading aid.

26. (Currently Amended) Device according to claim 25, ~~characterized in that the~~ wherein said magazine means ~~includes~~ is constructed for receiving objects with parallel rod axes in an arrangement of rows.

27. (Currently Amended) Device according to claim 25, ~~characterized in that the~~ wherein said magazine means ~~are constructed for modifying the geometry of the~~ ~~modify a~~ geometrical arrangement of the objects arrangement.

28. (Currently Amended) Device according to claim 23, ~~characterized in that the~~ wherein said first gripping device has ~~for each object an associated~~ a plurality of gripping elements, each gripping element gripping a portion of one of the objects.

29. (Currently Amended) Device according to claim 25, ~~characterized in that the~~ wherein said magazine means ~~have an associated~~ includes a plurality of storage elements, each storage element receiving one of the objects ~~for each object.~~

30. (Currently Amended) Device according to claim 28, ~~characterized in that the~~ wherein said gripping elements and/or storage elements have a lateral guidance means for

guiding the object held into said gripping elements and/or storage elements.

31. (Currently Amended) Device according to claim 30, ~~characterized in that in the~~
wherein said guidance means guidance elements of at least the said gripping elements [[are]]
is integrally connected with a integrated closure means for retaining the objects.

32. (Currently Amended) Device according to claim 30, ~~characterized in that the~~
wherein said guidance means guides the objects such that one rod axis of one object is oriented
are constructed for the parallel to another rod axis of another object, whereby the objects are
positioned in a parallel orientation ~~of the rod axes of objects.~~

33. (Currently Amended) Device according to claim 28, ~~characterized in that at least~~
one group of wherein one gripping elements is arranged in element is located adjacent another
gripping element to form a row of gripping elements.

34. (Currently Amended) Device according to 29, ~~characterized in that at least one~~
group of storage elements is arranged in wherein one storage element is located adjacent
another storage element to form a row of storage elements.

35. (Currently Amended) Device according to claim 33, ~~characterized in that at least~~
the wherein said gripping elements and/or the storage elements ~~of the group~~ are movably

arranged mounted for movement.

36. (Currently Amended) Device according to claim 35, ~~characterized in that the~~
wherein said gripping elements and/or storage elements are movable in a direction perpendicular
~~to the rod axis of the objects being held.~~

37. (Currently Amended) Device according to claim 33, ~~characterized in that the~~
wherein said gripping elements and/or storage elements of the group are slidably arranged on
a rail element extending in the direction of the row.

38. (Currently Amended) Device according to claim 33, ~~characterized in that~~ wherein
a ~~mutual~~ lateral spacing of gripping elements and/or storage elements is variable within the row.

39. (Currently Amended) Device according to claim 38, ~~characterized in that by means~~
~~of the lateral spacing it is possible to modify a first position of~~ wherein said gripping elements
and/or storage elements are movable from a first position to ~~preset on gripping the objects with~~
respect to a second position ~~of the gripping elements and/or storage elements preset through~~
5 based on a predetermined sought packing density in the loading aid, said first position defining
a first lateral spacing of said gripping elements and/or storage elements.

40. (Currently Amended) Device according to claim 33, ~~characterized in that the~~

wherein said one of said gripping elements and/or storage elements of the group are is
connected to another adjacent gripping element and/or storage element by connecting means
 to the in each case adjacent gripping element/storage element or gripping elements/storage
 elements (8.1c); to define through which two relative positions with two different pairwise
 lateral spacings of said gripping elements/storage elements are defined.

41. (Currently Amended) Device according to claim 40, ~~characterized in that there is~~
further comprising an individual power source for moving the gripping elements/storage
 elements for each group of gripping elements/storage elements.

42. (Currently Amended) Device according to claim 25, ~~characterized in that there is~~
further comprising a second gripping device for removing a second geometrical arrangement
 of objects from said magazine means.

43. (Canceled)

44. (Currently Amended) Device according to claim 23, ~~characterized in that there is~~
wherein a positioning insert is located in said loading ~~[[aids]]~~ aid.

45. (Currently Amended) Device according to claim 44, ~~characterized in that the~~
wherein said positioning insert has a reception means for receiving one of the objects, whereby

said reception means receives one rod end of one of the objects into which the latter can be introduced with one of their rod ends.

46. (Currently Amended) Device according to claim 23, ~~characterized in that there is~~ further comprising a further gripping device for removing each of the objects (removal device) from said loading aid, wherein said further gripping device is a removal device.

47. (Canceled)

48. (Currently Amended) Device according to claim 46, ~~characterized in that the~~ wherein said removal device for each object to be removed has a shell arrangement formed from at least two half-shells rotatable relative to one another about a common axis for receiving one of the objects to be removed, wherein one of the [[said]] objects is being receivable received
5 in a space constructed within the defined by said shell arrangement and [[is]] held therein by retaining means provided at one end of said shell arrangement.

49. (Canceled)

50. (Currently Amended) Device according to claim 46, ~~characterized in that the~~ wherein said removal device for each object to be removed has a clamping device formed from underengaging means for underengaging one of the objects and a hold-down means for

clamping one of the objects between said underengaging means and said hold-down means.

51 - 52. (Canceled)

53. (Currently Amended) Device according to claim 23, ~~characterized in that there is~~ further comprising a spreading station for spreading out and simultaneously applying a lining; ~~particularly a plastic bag present in the loading~~ [[aids]] aid against ~~[[the]] a~~ wall of ~~the~~ loading [[aids]] aid during ~~[[the]]~~ deposition of the objects.

54. (Currently Amended) Device according to claim 53, ~~characterized in that the~~ wherein said spreading station ~~is constructed for inclining the~~ inclines said loading [[aids]] aid ~~against the~~ relative to vertical during ~~[[the]]~~ deposition of the objects.

55. (Currently Amended) Device according to claim 23, ~~characterized in that the~~ wherein said first gripping device is operable by a handling device; ~~particularly a multiaxial industrial robot.~~

56 - 58. (Canceled)

59. (New) Device for handling substantially rod-shaped objects, particularly poles of articles which can be individually stacked in one another such as plastic cups, the device

comprising:

5 a manufacturing or processing machine providing objects in a first geometrical arrangement, said first geometrical arrangement having a first packaging density;

a loading aid element;

10 a magazine means for receiving the objects in said first geometrical arrangement and for modifying the objects from said first geometrical arrangement to a second geometrical arrangement after receiving the objects in said first geometrical arrangement, said second geometrical arrangement having a second packaging density, said second packaging density being greater than said first packaging density, wherein the objects are positioned in said magazine means in an upright position;

15 a transfer means for transferring the objects in said second geometrical arrangement to said loading aid element such that the objects in said second geometrical arrangement are positioned in said loading aid in said upright position.

60. (New) Method according to claim 19, wherein said handling device is a multiaxial industrial robot.